

its being studied in an isolated condition, special importance is to be attached to the rare cases in which this condition occurs.

The cancer blastema, it would appear from Case I., is not a mere albuminous solution, as has been so frequently asserted, but contains also *fibrin*; resembling in this respect the liquor sanguinis on the one hand, and plastic exudations (inflammatory lymph), on the other.

If this should prove to be true of the cancer blastema as a rule, we may, it appears, infer the negative of the doctrine of Rokitsansky, that the cancerous diathesis is essentially an *albuminosis* (Rokitsansky's *Path. Anat.*, Phila. edit., 1855, vol. i. p. 298); a doctrine based wholly on the supposition that the cancer blastema is purely albuminous. On the other hand, if this blastema be constituted as above hinted, it would give additional confirmation to the doctrine of Carl Wedl, derived from morphological considerations, and expressed concisely in the following words: "The fundamental character of cancer is that of a malformed (aborted) and degenerating new formation of connective tissue." (*Rudiments of Pathological Histology*, by Carl Wedl, M. D., translation of the Sydenham Society, pp. 610.)

ART. VII.—*Contributions to the Pathology of Disease of the Encephalon.* By FREDERIC D. LENTE, M. D., Surgeon to the West Point Foundry.

*Softening of the Brain; Hemiplegia; Partial recovery; Apoplexy; Death.*—D. B., aged 58, schoolmaster. This patient has enjoyed fair health during life except in one particular. For twenty years past he has suffered from headache, and for a number of years this has been his almost constant attendant, scarcely ever being absent more than a day at a time, sometimes very severe, and generally so at the end of the week after attending to his duties at the school. He is slightly below the medium stature, spare habit, no peculiar conformation of head or neck, pleasant countenance, and cheerful disposition.

In May, 1857, patient first consulted me in reference to a deafness, which was becoming more annoying, and also mentioned incidentally his headache, which he had come to regard as an inevitable companion of his existence. Finding nothing abnormal about his external *meatus* or *membrana tympani*, I regarded the deafness in connection with the obstinate cephalalgia, as a symptom of graver trouble within the cranium, and advised a course of iodide of potassium, with counter-irritation behind the ears, and in case of no relief, a seton in the nape of the neck. A few weeks after this, in the month of June, I was summoned hastily to Mr. B., and found him at the house of a friend, lying on a bed on his back completely hemiplegic on the *left side*, very restless, and making constant efforts to turn himself over towards the paralyzed side;

pupils natural, and acting under the stimulus of light; eyes closed; pulse rather feeble. When addressed very loudly, he would answer correctly by monosyllables, but it required some effort to get an answer. Nothing was done except to apply sinapisms to each lower extremity, which seemed rather cool, and to enjoin as perfect rest as possible. The manner of his attack was this: He was conversing with a friend, and the conversation had been of a rather exciting nature. He was about taking his leave, having risen to his feet for that purpose, when he reeled, and fell to the floor in the state in which he was found by me a few minutes after. Without going over the tedious details of a case extending over several months, I will state, in as few words as possible, the subsequent history up to the period of the death and autopsy.

In the first place, it was ascertained that, about a year ago, and for the first time, the patient experienced a slight symptom of paralysis of the left side, which soon disappeared without giving rise to any serious apprehension. A week previous to his present attack, he experienced in the school-room a sensation on the left side similar to the first, which subsided as before. For a week or two subsequent to his last seizure, patient remained drowsy and restless, it being necessary to keep some one by him constantly to prevent him turning himself out of bed, always towards the paralyzed side. He was conscious all the time, but never spoke unless spoken to in a loud tone. The only treatment during this time was a mercurial cathartic and stimulating enema, which had a good effect. Subsequently he became more quiet, his intellect cleared up gradually, and eventually he would converse as freely as ever, being naturally loquacious. But his conversation indicated some weakening of the mental powers, though his memory seemed unimpaired, except, perhaps, in reference to recent events. There was during all this time complete abolition both of sensation and motion on the left side. The tongue was at first protruded in a marked degree towards the left side, but after some weeks this ceased to be the case; it then protruded in a straight line. The *buccinator muscle* was also completely paralyzed, so that it was difficult for the patient to retain his food between his teeth on the left side. After the lapse of four or five weeks patient gained some power of sensation and motion in the lower extremity; this continued gradually but very slowly for about two months, at the end of which time he could, with great exertion, move about the room with the aid of crutches. For some weeks after his attack he was almost free from headache, but it subsequently troubled him to some extent, though not to compare with its former violence. During all that time he had been kept on supporting treatment, with frequent cathartics and enemata, on account of torpidity of the bowels.

In July, he had a sudden seizure, characterized by insensibility, convulsive movements of the *right* arm and leg, and of the muscles of the neck, excessive jactitation, stertorous breathing, moaning, &c., but no regular spasms, or frothing at the mouth, or twitching of the facial muscles. Pulse rather weak. A stimulating enema, head shaved, bladder of ice, and, subsequently, a blister

to back of neck, and afterwards, as the headache continued troublesome, to the vertex. He gradually recovered from this attack, and within a week was apparently as well as before. From this date until his death, he had four seizures, at intervals of five or six weeks, generally. The two succeeding that just described were similar, except that the pulse was hard and bounding, and the head more congested. It was deemed prudent to cup the temples, and about seven ounces of blood were taken. In both cases, the restlessness was not immediately subdued by the cupping, but subsided permanently after the inhalation of chloric ether. After each of these attacks, he seemed to gain the power of the paralyzed limb more rapidly. There was also some rigidity of the knees and elbow-joints complained of. At this time there was oedema of the hand and foot, but, for some time prior to death, this disappeared.

On the 6th of March, 1858, after having been unusually well for some weeks, patient had a regular apoplectic seizure, which developed itself rather slowly. He did not lose his consciousness for more than an hour after being stricken down, and the paralysis of the *right* side, which eventually became complete, was only partial at first. He could raise his leg when first seen by me, and feebly grasp the hand. He complained, when requested to describe his sensations, of headache, and of a burning and pricking sensation in the right side. The pulse was full and bounding. Pupils inactive; constant nausea and vomiting. He died comatose in a few hours.

During his first attack, patient was seen by Dr. John Green, of New York; afterward, during the progress of the case, by Drs. J. B. Reynolds, Joseph Bluxome, and Geo. S. Howdaway, late House-Physicians of Bellevue Hospital.

*Autopsy twenty-one hours after death.*—Body in a cold room, thermometer ranging but little above zero. Examined only the head. Membranes healthy; some opalescent subarachnoid serous effusion. Convolutions at vertex slightly flattened. Upon removing the brain, about three ounces of bloody serum were noticed at the base; upon inverting it, two clots were seen—one anterior to, and one posterior to, the *pons Varolii*. The substance of the hemispheres appeared healthy. No abnormal amount of serum in the lateral ventricles. On the *right* side, in cutting down towards the *corpus striatum*, a little to the outside of the ventricle, the knife encountered a tolerably firm resisting tissue. This was found to be the induration surrounding a cavity with collapsed walls, involving the posterior portion of the *corpus striatum*, and, to a moderate extent, the adjacent hemisphere. This cavity was large enough to admit a walnut, was lined by a dense, resisting, false membrane, and contained a small amount of the peculiar ochre-colored, gelatinous matter, resulting from changes in a former apoplectic clot. The remaining tissue of the *corpus striatum* was healthy, except a small cavity in its substance like the larger. The left *corpus striatum* healthy, except a very small cavity similar to those just described. Both *thalami* healthy. The clots noticed at the base of the brain proved to be continuous with each other through the *iter a tertio ad*

*quantum ventriculorum*, which was greatly dilated, as was also the fourth ventricle, which was many times larger than natural from distension by the clot, which had not, however, injured the texture of the cerebellum, but had completely destroyed the *crura cerebelli* so as to separate the lesser from the greater brain. The *pons Varolii* was broken down and disorganized throughout its upper half.

A portion of the right hemisphere forming the wall of the recent apoplectic cavity, placed under the microscope by Dr. Hardaway, exhibited abundance of atheromatous deposits in its vessels. The semifluid substance contained in the old cavity, under the microscope, exhibited only confused granular matter with one or two atheromatous masses. A few vessels in adjacent portions of brain apparently healthy, exhibited no atheroma.

*Softening of the Brain, characterized by very Obscure Symptoms, Terminating in Sudden Effusion of Serum and Death.*—Louis Rossmann, 45, Germany. After working in the ice for some days in January, 1858, patient was attacked with a chill followed by fever; he continued to have regular paroxysms of this kind, and of the tertian type for some days, but they were checked by quinine and other antiperiodics. Patient did not regain his strength, however, and in a week or ten days the paroxysms recurred. He continued to go on in this way until about the middle of March, when, after having been obliged to go about with considerable difficulty on account of gradually increasing debility, he took to his bed and seldom again left it. At this time his paroxysms had lost their periodicity, and he had no well marked chills, though he often experienced chilly sensations, which were followed after an uncertain period by febrile excitement and increase of headache, which had troubled him more or less from the beginning. The tongue had been and continued to be coated with a thick yellowish fur, and he frequently vomited during his paroxysms a greenish fluid, though his nausea was never excessive or long continued, and he generally retained what his appetite prompted him to eat. He also complained at this time of pains in his limbs and indeed all over his body. Up to this time he had been under the treatment of my assistant, Dr. Joseph Bluxome, late of Bellevue Hospital, and subsequently under that of his successor, Dr. G. S. Hardaway. Sometimes, under the influence of anti-bilious remedies and tonics, patient seemed to revive for a day or two and feel better, but he continued gradually to grow weaker, and complain more of headache and nausea and general uneasiness until about ten days before death, when his attendant noticed a slight convulsion, as she called it, affecting the *left* side of the body. It speedily passed off, and when Dr. H. saw him soon after, there was no sign of paralysis. Up to this time there had been no special symptom to point to the brain as the seat of his difficulty, although the idea of cerebral disease had suggested itself to the mind of the doctor for some time previous to this, on account of the persistence of the symptoms and the impossibility of refer-

ring the cause to disease of any other organ. Patient's consciousness was always perfect, his memory fair, his pupils active, and the headache, until within a short time previous to his death, not more severe than might be accounted for by the condition of his gastro-hepatic apparatus. His appetite was also as good as could have been expected, and he drank a moderate allowance of beer every day. About thirty-six hours before death, which occurred on the 16th of May, he was attacked rather suddenly with hemiplegia of the *right* side, preceded for some hours by total unconsciousness, the pupils all the time natural.

*Autopsy.*—The friends could not be induced to permit an examination until about twenty-four hours after death, and then only of the head. It was conducted by Dr. Hardaway. Upon removing the calvarium, nothing special was noticed about the membranes or surface of the brain. Upon slicing off the hemisphere, the bloody points in the *centrum ovale* were perhaps more numerous than normal. The moment the left ventricle was reached there was a sudden gush of clear serum, which, when received in the calvarium the only vessel at hand, was estimated at about five ounces at least. In flowing away, as it did with some force on first opening the ventricle, it was observed to carry along with it abundant shreds of softened white cerebral matter, and these proved to be the softened *corpus callosum*, which was affected in this extreme degree throughout almost its whole extent. In the posterior corner of this ventricle was a consistent mass of gelatinous pus which perhaps amounted to three-fourths of a drachm. The right, which contained no abnormal amount of serum, also contained in its posterior cornu a similar mass, but less in quantity. All other portions of the brain appeared healthy, and the parts adjacent to the *corpus callosum* appeared little if any more softened than would be apt to occur from *post-mortem* changes. A portion of the basilar artery examined under the microscope showed no signs of disease; but abundant nteromatous deposits were observed in the vessels of the cerebral substance taken from different parts of the brain.

*Slight Injury of the Head followed by a Slow and Insidious Development of Subacute Meningitis, and Death.*—M. C., aged 14, female. Was called to this patient on the 17th of February, 1858. She has generally enjoyed good health until the last five or six weeks, during which time she has been gradually failing, has lost her appetite, is dull and spiritless, frequently troubled with nausea and vomiting, complains of dull headache and debility; she has also fever coming on at irregular intervals, about twice in the twenty-four hours. Is not drowsy. Within the last few days, the vomiting and debility have become the most prominent symptoms, and she is unable to retain any food on the stomach. Bowels rather constipated. Has not kept her bed. Pulse very feeble, but not frequent; skin hot and dry; tongue inclined to dryness; she has constant headache, but it is never very severe. Intellect quite clear. It was difficult to make out a clear diagnosis, but as the fever

assumed something of a remittent type, and tonics seemed indicated, quinine was ordered, in conjunction with small doses of calomel, after endeavouring to quiet the irritability of the stomach by various sedatives; also brandy in small quantity. The nausea and vomiting continued to be prominent symptoms for some days, but finally yielded to a blister over the epigastrium. After a time, the bowels became very much relaxed, the evacuations being dark, fluid, and offensive; the diarrhoea was checked by mild anodynes. After several days' attendance, during which the patient's condition seemed to be growing gradually worse, I was informed that, about five weeks before I was called, patient had fallen and struck her forehead violently against a stone door-step, producing a wound just over the left eyebrow, the cicatrix of which is very evident. It had not previously occurred to the mother that this had any connection with her daughter's illness. From a few days after this occurrence her decline in health may be dated. A blister was now applied to the back of the neck, but patient continued slowly to sink, and became more drowsy, but retained her mental faculties to the day of her death, which was on the 26th February.

*Autopsy fourteen hours after death.*—Head only allowed to be examined. I was assisted by Dr. Bluxome. Upon removing the *calvarium* and *dura mater*, which had a normal appearance, the vessels of the *pia mater* were noticed to be considerably injected; there was also a layer of turbid serum beneath the arachnoid, and covering the whole surface of the hemispheres, and somewhat flattening the convolutions. There was also from two to three ounces of serum at the base, and rather more fluid in the lateral ventricles than in a normal state. There was no fracture of the skull, and no disease of the substance of the brain.

The following cases do not strictly come under the heading of this article, but they occurred about the same time with the above cases, and may not prove uninteresting in connection with them.

*Paralysis of Portio-dura, with Slight Hemiplegia.*—Mrs. J——, full habit, usually in the enjoyment of good health, aged about 50, married. Was called to her Oct. 2d, 1857, and found her complaining of "numbness" of right side of face, and entire inability to close the right upper eyelid. Says that about two weeks ago she had some headache, attended by "flashes of heat" and "snapping" of the left eye, with slight numbness of the left arm. These sensations on the left side of the face soon passed over to the right; says she could distinctly feel the numbness passing over across the nose to the right side, where it has since remained; her tongue has also been affected from the first, and the sense of taste annulled; when she protrudes the tongue, it is turned considerably to the left, the mouth is drawn very much to the left, and especially when talking; the whole right side of the face is devoid of feeling. There is some slight pain on pressure behind the right ear, no headache, feels tolerably well; there is now very little numbness in the left arm; thinks the

trouble is gradually passing off. Says she has been "hilarious" for two or three weeks. As the bowels were rather constipated, ordered fifteen grains of calomel to be taken immediately.

Oct. 3. Much better; can half close the eyelid, and protrudes the tongue in almost a straight line. Says she felt decidedly better soon after taking the powder, and has more taste than she has had since her attack. Medicine has acted freely; applied caustharidal collodion freely to the right mastoid process, and saw no more of my patient for some weeks, at the end of which time, found that her unpleasant symptoms had entirely subsided.

I may briefly remark, concerning this case, that according to Dr. Todd, it is very rare to have paralysis of the portio-dura in connection with hemiplegia, or with actual cerebral disease. That there is cerebral disease in this patient I have very little doubt from the nature of the symptoms, and it will doubtless be proved at some future time. It is possible that the disease may be situated near the origin of this nerve, and thus have occasioned a temporary paralysis. Case 14 in Dr. Todd's work is somewhat similar.

*Paralysis of Portio-dura from Rheumatic Periostritis.*—Mrs. H——, aged about 48, very stout and plethoric, and generally in the enjoyment of robust health. Was called to her December 3d, 1857, and found her complaining of severe neuralgic pains affecting the right side of the face and right occipital region, especially about the mastoid region and over the right eye; the pain over the mastoid is much aggravated by pressure; there is also complete paralysis of sensation and motion of all the parts supplied by the right portio-dura. She cannot close the upper eyelid in the slightest degree; the mouth is drawn distinctly to the left side even when not speaking, and when she attempts to corrugate the brow, the right side of the forehead is perfectly smooth to a little beyond the median line; the tongue when protruded does not deviate; the taste is unimpaired; when she drinks the fluid has a tendency to run out of the right corner of the mouth; has had the occipital pain for two weeks, but the paralysis only a few days; has had no gastric derangement, tongue clear, bowels regular; has not been exposed to any draught, or to unusual cold; has had no syphilitic disease; some time ago had rheumatism in one of her shoulders.

Ordered hydr. sub. mur.  $\mathfrak{ij}$  statim; to have leeches to right mastoid region, followed by empl. cantharid.

Dec. 4. Leech-bites healed freely. The pain on pressure and the neuralgic pains have almost entirely disappeared. The mercurial acted freely. Can close the eyelid to a considerable extent, and the mouth is not drawn quite as much.

7th. Rather better; paralysis less marked; has occasional neuralgic pains about the mastoid region. R.—Potassii iodid. gr. v, ter die.

14th. Improving. Cont. med.

20th. Paralysis scarcely noticeable.

May 10, 1858. Patient recovered completely from her attack, and continued well until about three weeks ago, when she was attacked with severe rheumatic inflammation of the right knee-joint. She has just recovered from this last attack.

The following notes are furnished me by Dr. Geo. S. Hardaway, late Resident Physician of Bellevue Hospital:—

*Cancer of the Sella Turcica and Brain, producing Apoplexy. Death and Autopsy.*—J. H., æt. 35, a native of Ireland, of medium stature and muscular frame, was admitted into Bellevue Hospital under my care, in service of Dr. Alonzo Clark, January 8, 1858.

He gave no account of previous disease, and was not emaciated, but he had rather an anxious expression of countenance. He complained of some pain in the joints and slight cough, but on examination no disease was discovered, and he was not put under treatment.

On the morning of the 11th, he was eating breakfast as usual, but after taking a few mouthfuls he seemed somewhat confused and leaned his head forward on the table. He then got up, went to the water closet, had a very copious evacuation from his bowels, and fell insensible.

When seen an hour afterwards he was paralyzed on both sides, and was totally insensible. The right pupil was larger than the left; pulse slow and full; respiration not stertorous except when his head was turned to one side.

He remained in this condition, except that his pulse became frequent, until the 13th, at 5 P. M., when he died of exhaustion.

*Autopsy twenty hours after death.*—Body had lain in a cold room since death. Rigor mortis well marked.

*Head.*—Brain convolutions flattened, some little meningitis, and a good deal of congestion.

The sella turcica was the seat of soft cancerous disease, about one-third of an inch in depth, which had extended to the brain; and the membranes in the vicinity of the disease were thickened by irritation.

At the base of the brain the thickened meninges formed part of the membranes of a cyst which was filled with fluid blood. This cyst was about the size of a walnut, and laid in the crura cerebri, mostly on the left side. The cancerous disease in the brain extended nowhere beyond half an inch from the cyst.

Other organs healthy.

Dr. Clark thought that the mind was not affected in this case, and that the patient appeared totally insensible because all voluntary motion was destroyed, and of course, therefore, all power of giving any evidence of mind. For muscular motion is the only means we have of giving expression to thought.